

**New Program Proposal  
Master of Science  
Major in Informatics  
University of South Carolina Upstate**

**Summary**

The University of South Carolina Upstate requests approval to offer a program leading to the Master of Science degree with a major in Informatics with tracks in Health Information Management and Information Resource Management to be implemented in Fall 2013, to be offered at its Spartanburg and Greenville campuses. The courses will be offered in traditional and distance format.

The Program Planning Summary was reviewed by the Advisory Committee on Academic Programs at its meeting on January 19, 2012, without substantive comment. The Board of Trustees of the University of South Carolina approved the proposal on April 12, 2012. The proposal was submitted for Commission review on April 24, 2012. A revised proposal was submitted to the Commission on October 4, 2012.

According to the proposal, the purpose of the program is to prepare students for information technology careers in healthcare, an industry that is ever more dependent upon technology and the availability of electronic information. The proposal states that students will be able to “envision, plan, and design information management and information technology systems, solutions, structures, and processes while ensuring legal and regulatory compliance.” The proposal also states that graduates will “manage IT project teams and consultative relationships with third party vendors.”

The proposal notes that given national initiatives and priorities which focus on implementing healthcare technology systems to create paperless information environments, demand for students trained in healthcare information technology and information processing will be strong and will only increase in the future. The proposal also states that in 2000-2001, the University of South Carolina Upstate implemented an undergraduate degree in Information Management and Systems (IMS) from which approximately 600 students have graduated.

The proposal notes that there are no other comparable degree programs in the state and that offering this program will be a major advancement for higher education in South Carolina. According to the proposal, the program will be one of only a few such programs in the nation and for this reason, the institution expects that offering the program will enhance the prominence of the institution and, by extension, that of the state.

In order to address similarities and differences with other programs in the state, the proposal states that the University of South Carolina offers a Master of Health Information Technology (MHIT) program jointly with the Integrated Information Technology program and the Arnold School of Public Health. The aforementioned program is similar to the proposed program such that it blends a foundation in information technology with coursework in the healthcare area. The proposal also notes several significant differences. Importantly, the proposed program would result in a master's degree in Informatics and not information technology *per se* since, as stated in the proposal, informatics is a superset of information technology. Coursework in the proposed program addresses issues in informatics such as negotiating the politics of corporate executive management; impacts to business and popular culture; the role of innovation in today's global economy; and information architecture. While the MHIT is a master's degree dedicated to health information technology, the health

information management component of the proposed program at USC Upstate is represented by one specific track.

Additionally, according to the proposal, the Darla Moore School of Business offers a concentration in information systems within the international MBA program as well as an emphasis in management information systems (MIS) as part of the doctoral program in business administration. The proposal states that there is no overlap between the proposed program and either of the above-mentioned programs. The proposal also states that as part of its M.S. degree in Management and Ph.D. degree in management, Clemson University offers courses in information systems intended to provide knowledge about information technology in functional operational management areas. One concentration in these programs prepares students to be managers of information systems; however, the focus is on systems as capital resources. The proposed graduate program at USC Upstate focuses on information that is to be managed rather than the actual systems.

The proposal also states that several South Carolina institutions (among them the University of South Carolina, Clemson University, and the College of Charleston) offer graduate programs in computer science or information systems and that these are oriented toward producing graduates who build information technology systems. Graduates of the proposed program will develop expertise in how to use information systems for specific purposes given the focus on the information itself and information processing.

The institution expects that the proposed program will be of interest to various groups of students. The proposal notes that the associate degree in health information management three technical colleges offer provides an important pipeline of students who seek pathways into both undergraduate and graduate programs in health information management. The institution's research demonstrates that demand for graduates with the skills and knowledge gained through successful completion of the proposed program will be strong. The proposal states that Information and Management Systems (IMS) graduates are in high demand by South Carolina employers, notably along the I-85 corridor in the Upstate region. The proposal maintains that given the ever-increasing size of the healthcare industry, demand for information management professionals in this industry segment will remain strong and will increase in the future. The proposal notes that in the Upstate region of South Carolina specifically, the healthcare industry is one of the major employers and is responsible for more than 30,000 jobs in region. The proposal points out that both the Spartanburg Regional Healthcare System (SRHS) and the Greenville Hospital System (GHS) are two of the most technologically progressive healthcare systems in the nation and both have strong demands for graduates with advanced degrees in this increasingly important field.

The proposal affirms that beyond the established admission criteria, no specialized admission criteria for the proposed program exist. The proposal outlines fully the requirements, process, and procedures that applicants are required to follow and notes that degree candidates will be considered for full admission once the Admissions Office is in receipt of all required materials. The proposal stipulates that students are permitted to take up to six hours of program courses provisionally pending receipt of all materials.

The proposal states that the institution will add 15 new courses in support of the proposed program and that these courses and the program will appear in the next catalog, pending CHE approval. The proposal specifies that the curriculum as reflected in the table below will consist of at least 30 semester hours beyond the baccalaureate degree, including six hours of thesis or independent study. Two tracks will be available in the proposed program: Health Information Management (HIM) and Information Resource Management (IRM).

<i>Informatics Core (required for all students)</i>	
SIMS 622:	Advanced Knowledge Inference Systems
SIMS 650:	Information Resource Management
SIMS 710:	Systematic Innovation
SIMS 720:	Information Architecture
<i>(student chooses one of these tracks)</i>	
<i>Health Information Management</i>	<i>Information Resource Management</i>
SHIM 750: Public Health Statistics	SIMS 760: IT Intellectual Property Protection
SHIM 751: Healthcare IT Vendor Management	SIMS 761: Business and Competitive Intelligence
SHIM 752: Compliance in the Healthcare Industry	SIMS 762: Interoperability
SHIM 753: Strategic Planning for Healthcare Information Management Systems	SIMS 763: Advanced IT Project Management
<i>Independent Study<sup>1</sup></i>	
SIMS 798: Independent Graduate Study in Informatics (1-6 hours)	
SIMS 799: Thesis Preparation (1-6 hours)	
SIMS 796: Special Topics in Graduate Informatics (1-6 hours) (optional)	

<sup>1</sup>A minimum of six hours of SIMS 798 or SIMS 799 is required. Students can take these six hours across multiple offerings of the program. The SIMS 796 course is optional that may be substituted for any of the other courses except for SIMS 798 and SIMS 799. The content and credit hour rating of a SIMS 796 offering will be determined by the instructor.

According to the proposal, all the institution's academic units use a formal assessment instrument, the *Program Assessment*, which specifies learning objectives and data collection. The proposal states that the learning outcomes provided in course descriptions in the full program proposal document will be used to construct the Program Assessment and that performance indicators from courses will be identified in order to measure success against expected outcomes. The proposal also states that data will be collected yearly for each learning objective and will be summarized into a final report which faculty will review and use to make suggestions for improvements needed to any learning objective. Suggestions and comments for improvements to the assessment instrument will also be incorporated into the report and changes will be implemented to courses as necessary. Suggestions from faculty for improvements to the curriculum, specific courses, and individual topics will all be integrated as well.

With respect to the assessment of faculty, the proposal states that full-time faculty members are assessed yearly in the categories of teaching, service, and scholarship. Faculty members are expected to teach a full load (usually four sections in the Fall and four sections in the Spring semesters). Additionally, faculty members are expected to serve on at least two governance committees and to perform extra-mural professional or community service; tenured

and tenure-track faculty are expected to publish/present at least one paper or article per year. The proposal states that the faculty assessment will incorporate graduate-level teaching and service for those faculty members who teach graduate courses and that no substantive change to the assessment is required.

According to the proposal, all students are encouraged to submit a *Student Opinion Poll (SOP)* survey for each course completed which includes several questions relative to rating their courses and instructors. Instructors review these surveys every semester and they are included in each faculty member's faculty assessment. The proposal states that student suggestions receive high attention and appropriate suggestions are incorporated into classroom delivery.

The proposal states that one new terminally-degreed, tenure-track faculty will be required during the first year of the program to support the health information management track of the proposed program and that the faculty member hired must hold the Ph.D. in health information management, public health, or a closely related field. Additionally, the proposal stipulates that this faculty member will preferably hold a Registered Health Information Administrator (RHIA) certification. According to the proposal, the new faculty member will teach up to three graduate courses per semester in the health information management track and will join four existing terminally-degreed faculty members (three associate professors and one instructor). The proposal also states that each of the four existing faculty will teach no more than two graduate courses per year and that the normal teaching load for each associate professor is four units per semester, with a teaching load for the full-time instructor being five units per semester. The proposal clarifies that each existing faculty will contribute approximately 25% of an FTE to the graduate program and that the new hire will contribute 100% of an FTE to the graduate program.

UNIT ADMINISTRATION/FACULTY/STAFF SUPPORT						
YEAR	NEW		EXISTING		TOTAL	
	Headcount	FTE	Headcount	FTE	Headcount	FTE
Administration						
2013-2014	0	0	1	0.5	1	0.5
2014-2015	0	0	1	0.5	1	0.5
2015-2016	0	0	1	0.5	1	0.5
2016-2017	0	0	1	0.5	1	0.5
2017-2018	0	0	1	0.5	1	0.5
Faculty						
2013-2014	1	0.5	3	0.75	4	1.25
2014-2015	0	0	4	1.25	4	1.25
2015-2016	0	0	4	1.25	4	1.25
2016-2017	0	0	4	1.25	4	1.25
2017-2018	0	0	4	1.25	4	1.25
Staff						
2013-2014	0	0	1	1	1	0.15
2014-2015	0	0	1	1	1	0.15
2015-2016	0	0	1	1	1	0.15
2016-2017	0	0	1	1	1	0.15
2017-2018	0	0	1	1	1	0.15

The proposal states that no changes to the existing physical plant will be required. Both office and classroom space exist which will accommodate the proposed program. The proposal also states that no new equipment will be needed to support the proposed program and that current resources will support delivery of the majority of the course material via distance education technology, teleconferencing, Internet, and DVD-based lectures, with no needs for new equipment nor personnel.

The proposal states that USC Upstate's academic library and the University Center of Greenville's F.W. Symmes Library and Media Center include holdings sufficient to serve the needs of students enrolled in the proposed graduate program. According to the proposal, the USC Upstate main library's collection of monographs, microforms, videotapes, and other formats totals 220,000 volumes and new items are added regularly based upon the Blackwell North American Book Approval plan and collection development practices which include input from librarians and program faculty. Also according to the proposal, the current serial collection includes access to 2,854 electronic subscriptions and 734 print subscriptions as well as access to over 10,000 journals and electronic books through database subscriptions. The

institution's library subscribes to more than 100 electronic databases with access to journal and newspaper articles, reference sources, full-text books, and other sources that are accessed over the Internet. Several databases are specifically related to technology management (the ACM Digital Library; General Business File ASAP; Reuters Business Insight; Science Direct; and Wiley InterScience). A reference librarian dedicated to the Department of Informatics is employed by the USC Upstate Library and will serve as the interface for the proposed graduate program.

The proposal states that the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM) accredits two-year, four-year, and six-year degree-granting programs in Health Informatics and Information Management. The USC Upstate Department of Informatics recently received accreditation of the undergraduate program in Health Information Management. The proposal states that the institution plans to seek accreditation for the proposed graduate health information management track within four years. In response to an inquiry from CHE staff, institution officials confirmed that specialized accreditation for the IRM track, most likely through the Accreditation Board for Engineering and Technology (ABET), is a long-term goal.

The proposal states that the University will "endeavor to keep the student/advisor ratio to 6:1 or less. Since students will be engaged in research only during their second year, a maximum enrollment of 30-35 students means that about 15-18 students at a time will require faculty advisors. With the current number of Department of Informatics faculty, this translates to a student/advisor ratio of approximately 3:1 yielding a comfortable margin. Total enrollment may increase in the future as the number of faculty is increased but for the remainder of this document a sustained enrollment goal of 30-35 students will be used for budgetary purposes."

The proposal includes two enrollment-projection tables. The first table shows the projected total and the second table shows the projected new enrollment figures for the first five years of the proposed program and notes that enrollment will build to the enrollment goal during the first two years. The proposal states that given that it will take at least two years to complete the program, there will be no graduates until after two years following the program's implementation, at which time enrollment is expected to stabilize.

<b>PROJECTED TOTAL ENROLLMENT</b>						
<b>YEAR</b>	<b>FALL</b>		<b>SPRING</b>		<b>SUMMER</b>	
	Headcount	Credit Hours	Headcount	Credit Hours	Headcount	Credit Hours
2013-2014	10*	60-90	15**	90-135	15	45
2014-2015	25*	150-225	30**	180-270	30	90
2015-2016	30***	180-270	35**	210-315	25	75
2016-2017	30	180-270	35	210-315	25	75
2017-2018	30	180-270	35	210-315	25	75

\* Ten new students admitted into the program each taking 2 or 3 courses per semester.

\*\* Five additional students admitted in the Spring semester each year.

\*\*\*Graduates replaced by new students. Headcount stabilizes in the third year at about 30 students.

PROJECTED NEW ENROLLMENT			
YEAR	FALL	SPRING	SUMMER
	Headcount	Headcount	Headcount
2013-2014	10	5	0
2014-2015	10	5	0
2015-2016	5	5	0
2016-2017	5	5	0
2017-2018	5	5	0

The proposal includes the following table that shows the total cost of the proposed program including all administrative, staff, and faculty allocation of time and resources. Because the required teaching units for the proposed program will be covered by re-assigning existing faculty, the incremental cost in the subsequent table reflects the actual financial impact. The University has committed to making these funds available for the program.

ESTIMATED TOTAL COST BY YEAR						
CATEGORY	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	TOTALS
Administration	\$9,000 <sup>1</sup>	\$9,270	\$9,548	\$9,834	\$10,129	\$47,781
Faculty Salaries	116,275 <sup>2</sup>	119,763	123,356	127,056	130,868	617,318
Graduate Assistant	0 <sup>3</sup>	0	0	0	0	0
Clerical/Support Personnel	4,500 <sup>4</sup>	4,635	4,774	4,917	5,065	23,891
Supplies and Materials	250 <sup>5</sup>	500	750	750	750	3000
Library Resources	3,000 <sup>6</sup>	3,000	3,000	3,000	3,000	15,000
Equipment	3,000 <sup>7</sup>	3,000	3,000	3,000	3,000	15,000
Facilities	2,040 <sup>8</sup>	2,040	2,040	2,040	2,040	10,200
<b>TOTALS</b>	\$138,065	\$142,208	\$146,468	\$150,597	\$154,852	\$732,190

According to the proposal, these numbers were developed with the following considerations taken into account:

1. Percentage of the Chair's time incremented by 3% each year to reflect annual raises.
2. Percentage of faculty salaries (dollar amounts are approximate prorated salaries at 7.5% per course and incremented each year by 3% to accommodate annual raises)
  - a. Fulbright/Toland: \$21,150
  - b. Routh: \$14,625
  - c. Tzacheva: \$10,500
  - d. New Hire: \$70,000
3. Graduate stipends will be paid from external funding sources supporting research projects.
4. 15% of the administrative assistant incremented by 3% each year to reflect raises.
5. The proposed program will result in 10 to 30 new students representing an increase of 10%-30% over current enrollment. The dollar value is the approximate cost of supplies and materials for the graduate faculty (see #2) multiplied by the percentage for that year.
6. Three new subscriptions to journals will be required each costing less than \$1000.
7. There are five faculty involved in teaching the graduate curriculum. Equipment and furniture cost for one faculty member is an expense of about \$2,500 every 3-4 years. Therefore, \$600/year prorated for five faculty members results in the \$3000 per year for this line item
8. The same methodology is used for this line item as with #7 except an office space costs approximately \$5000 for one faculty member and represents a continuing cost. The total for four faculty members then is \$20,000 per year when multiplied by the 51% fraction of time (\$10,200) and prorate yields the \$2,040 figure.

The proposal states that the total cost table shown above does not accurately represent the financial impact to the University. The following table shows the *incremental* cost to the University of adding the proposed graduate program. Financing for the proposed program will come from tuition only at the graduate course rate of \$455 per hour. No special state or Federal funding is required.

<b>ESTIMATED INCREMENTAL TOTAL COST BY YEAR</b>						
<b>CATEGORY</b>	<b>1<sup>st</sup></b>	<b>2<sup>nd</sup></b>	<b>3<sup>rd</sup></b>	<b>4<sup>th</sup></b>	<b>5<sup>th</sup></b>	<b>TOTALS</b>
Administration	\$0	\$0	\$0	\$0	\$0	\$0
Faculty Salaries	70,000	70,000	70,000	70,000	70,000	350,000
Graduate Assistant	0	0	0	0	0	0
Clerical/Support Personnel	0	0	0	0	0	0
Supplies and Materials	250	500	750	750	750	3,000
Library Resources	3,000	3,000	3,000	3,000	3,000	15,000
Equipment	3,000	3,000	3,000	3,000	3,000	15,000
Facilities	2,040	2,040	2,040	2,040	2,040	10,200
<b>TOTALS</b>	<b>\$78,290</b>	<b>\$78,540</b>	<b>\$78,790</b>	<b>\$78,790</b>	<b>\$78,790</b>	<b>\$393,200</b>



<b>SOURCES OF FINANCING BY YEAR</b>						
<b>CATEGORY</b>	<b>1<sup>st</sup></b>	<b>2<sup>nd</sup></b>	<b>3<sup>rd</sup></b>	<b>4<sup>th</sup></b>	<b>5<sup>th</sup></b>	<b>TOTALS</b>
Tuition Funding	\$89,000 <sup>1</sup>	\$178,000 <sup>2</sup>	\$216,125 <sup>3</sup>	\$216,125 <sup>3</sup>	\$216,125 <sup>3</sup>	\$915,375
Fees	0	0	0	0	0	0
State Funding	0	0	0	0	0	0
Reallocation	0	0	0	0	0	0
Federal Funding	0	0	0	0	0	0
Other	0	0	0	0	0	0
<b>TOTALS</b>	<b>\$89,000</b>	<b>\$178,000</b>	<b>\$216,125</b>	<b>\$216,125</b>	<b>\$216,125</b>	<b>\$915,375</b>

- 1- Estimating 200 credit hours at the rate of \$455 per hour (enrollment ramp up).
- 2- Estimating 400 credit hours at the rate of \$455 per hour (enrollment ramp up).
- 3- Estimating 475 credit hours at the rate of \$455 per hour (stabilized sustained enrollment).

### **Summary**

In summary, the proposed unique program will provide students with an opportunity to develop the requisite expertise, skills and knowledge for gainful and meaningful employment and service in the growing healthcare industry information technology field through participation in a dynamic program.

### **Recommendation**

The staff recommends that the Committee on Academic Affairs and Licensing commend favorably to the Commission approval of the program at the University of South Carolina Upstate leading to the Master of Science degree with a major in Informatics with tracks in Health Information Management and Information Resource Management to be implemented in Fall 2013, provided that no “unique cost” or other special state funding be required or requested.